

# MPC Safety Review

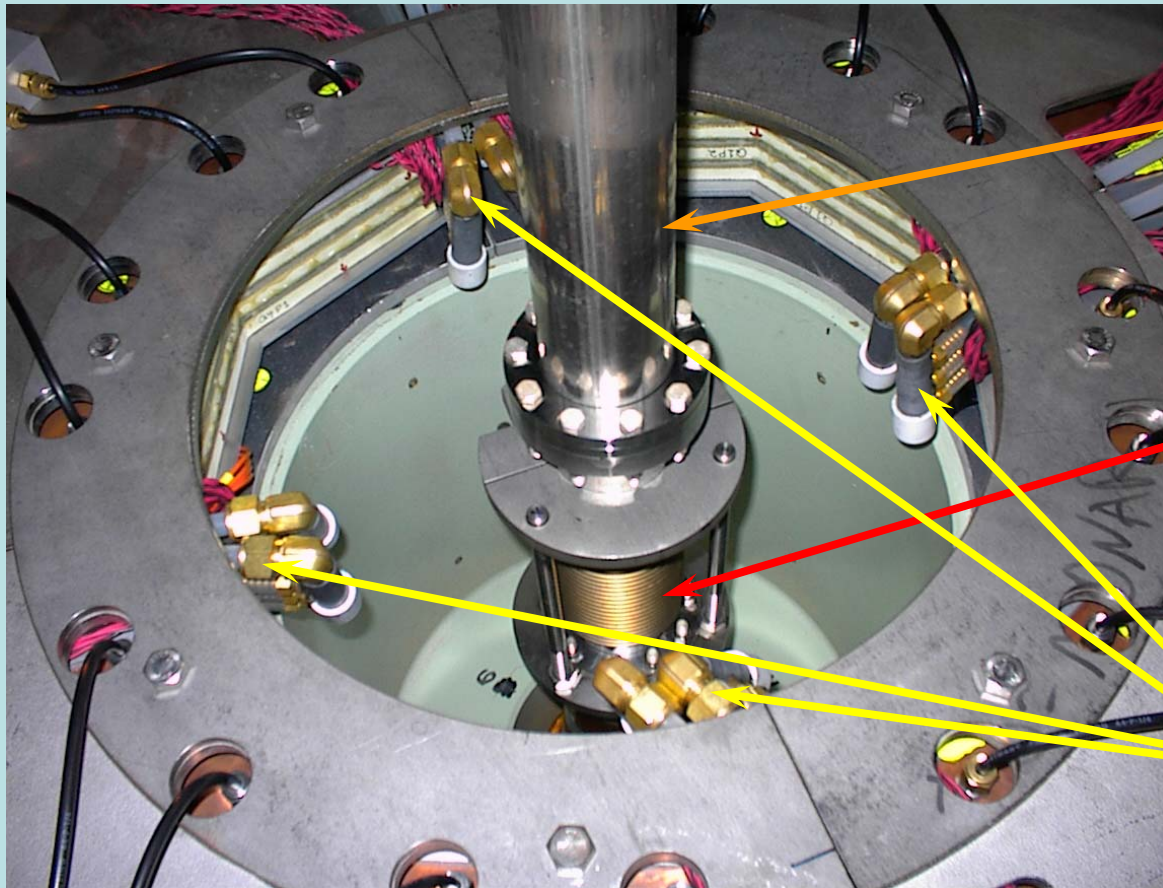
## Muon Piston-Cavity Calorimeter (MPC)

Mechanical Design

And

Installation

# MPC Safety Review

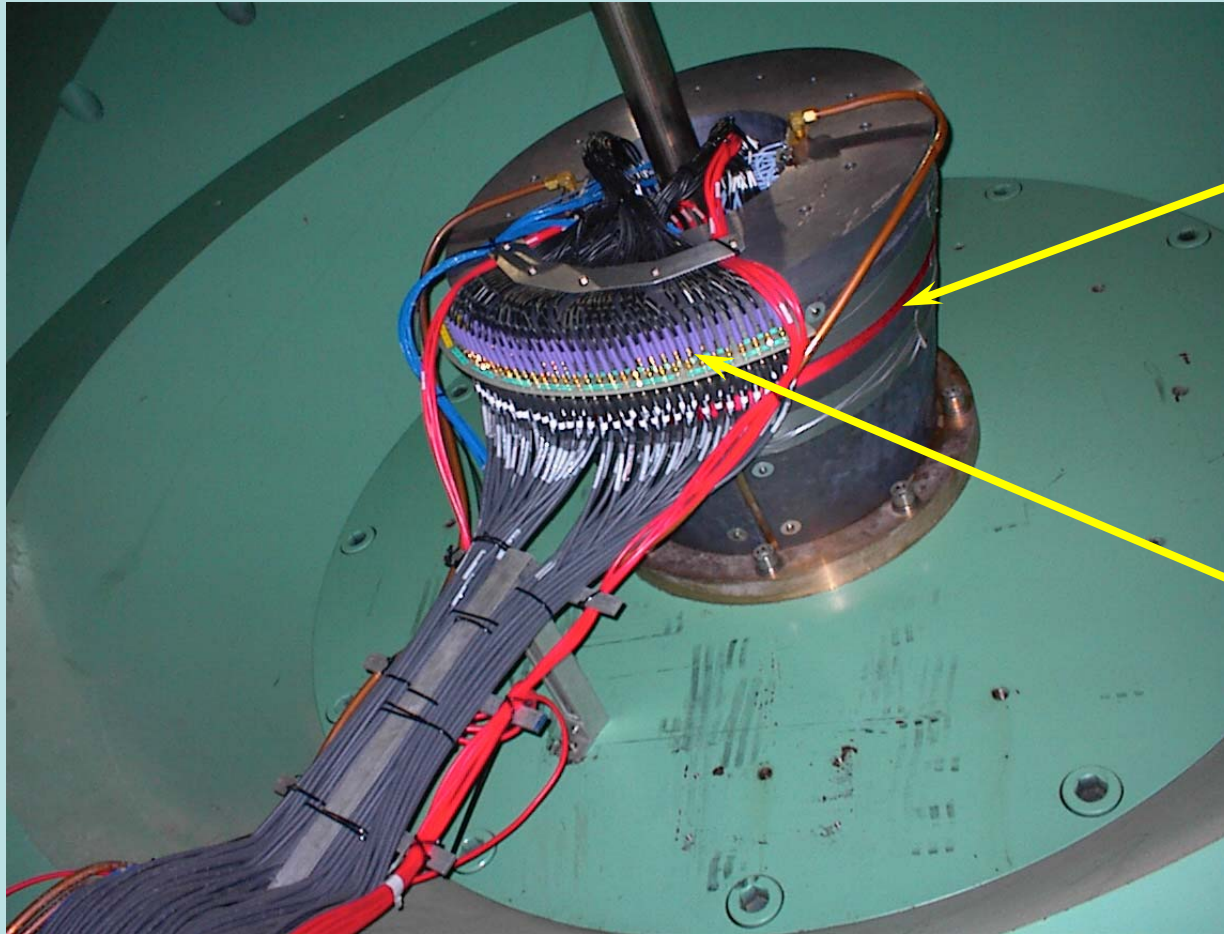


beampipe

bellows

Station 1 dry  
air manifolds

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“Flowerpot”

These cables protrude into the muon piston cavity when the MMS is in the closed (run) position



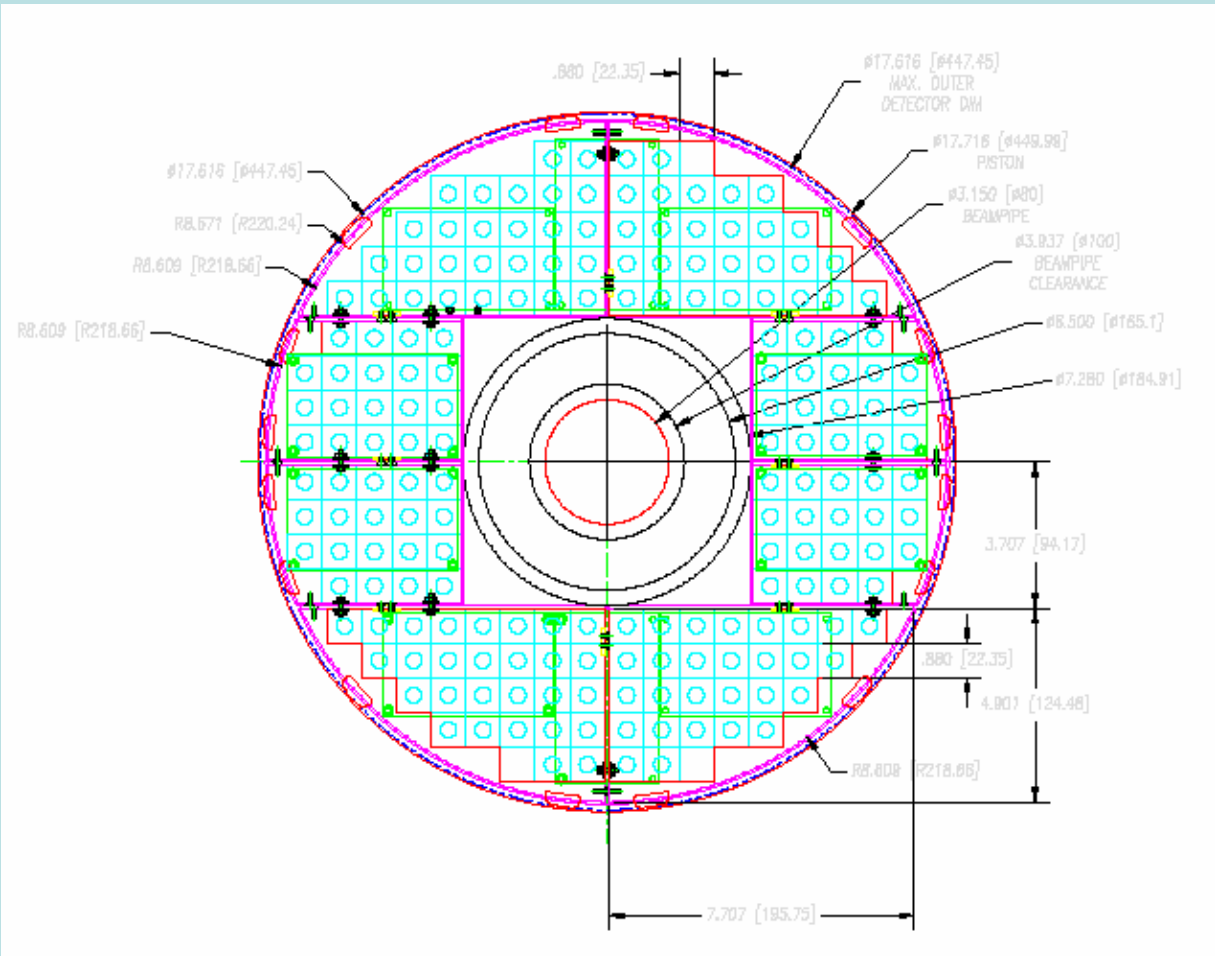
# MPC Safety Review



Looking up at  
Muon piston  
cavity.

MuTr  
Station 1

# MPC

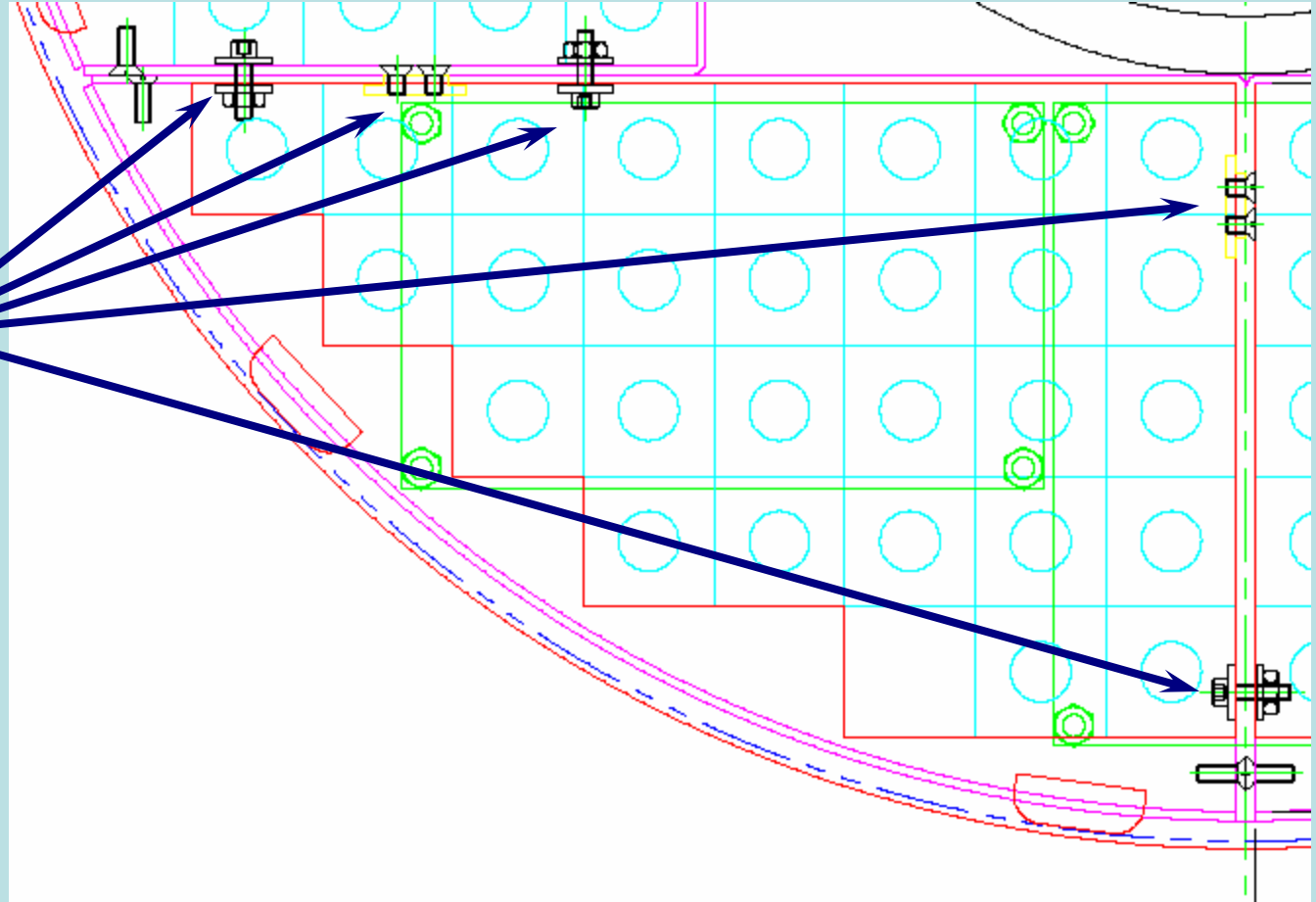


## 8 modules:

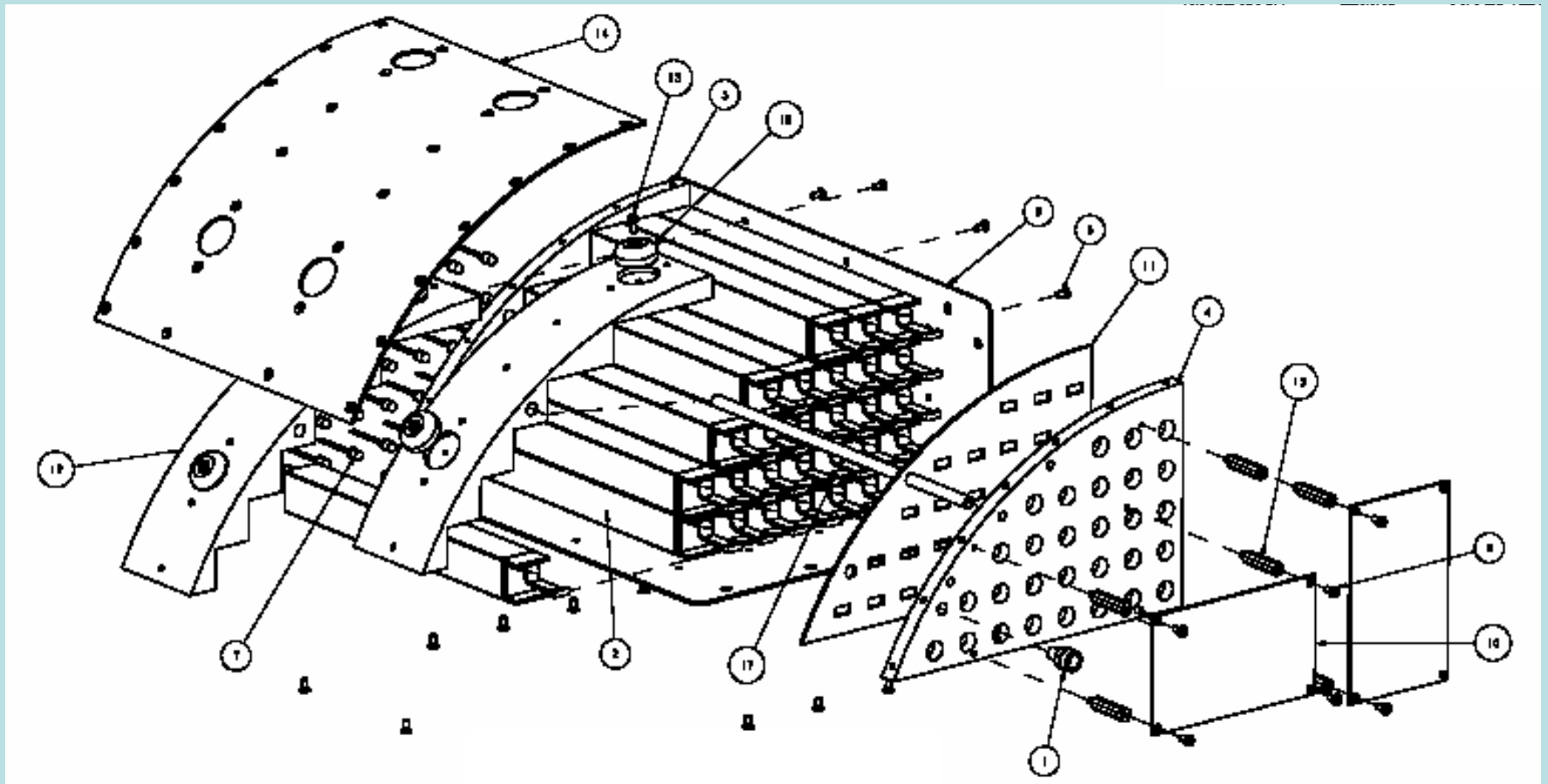
- 4 wedges w/ 29 crystals each
- 4 bricks w/18 crystals each
- 188 crystals total

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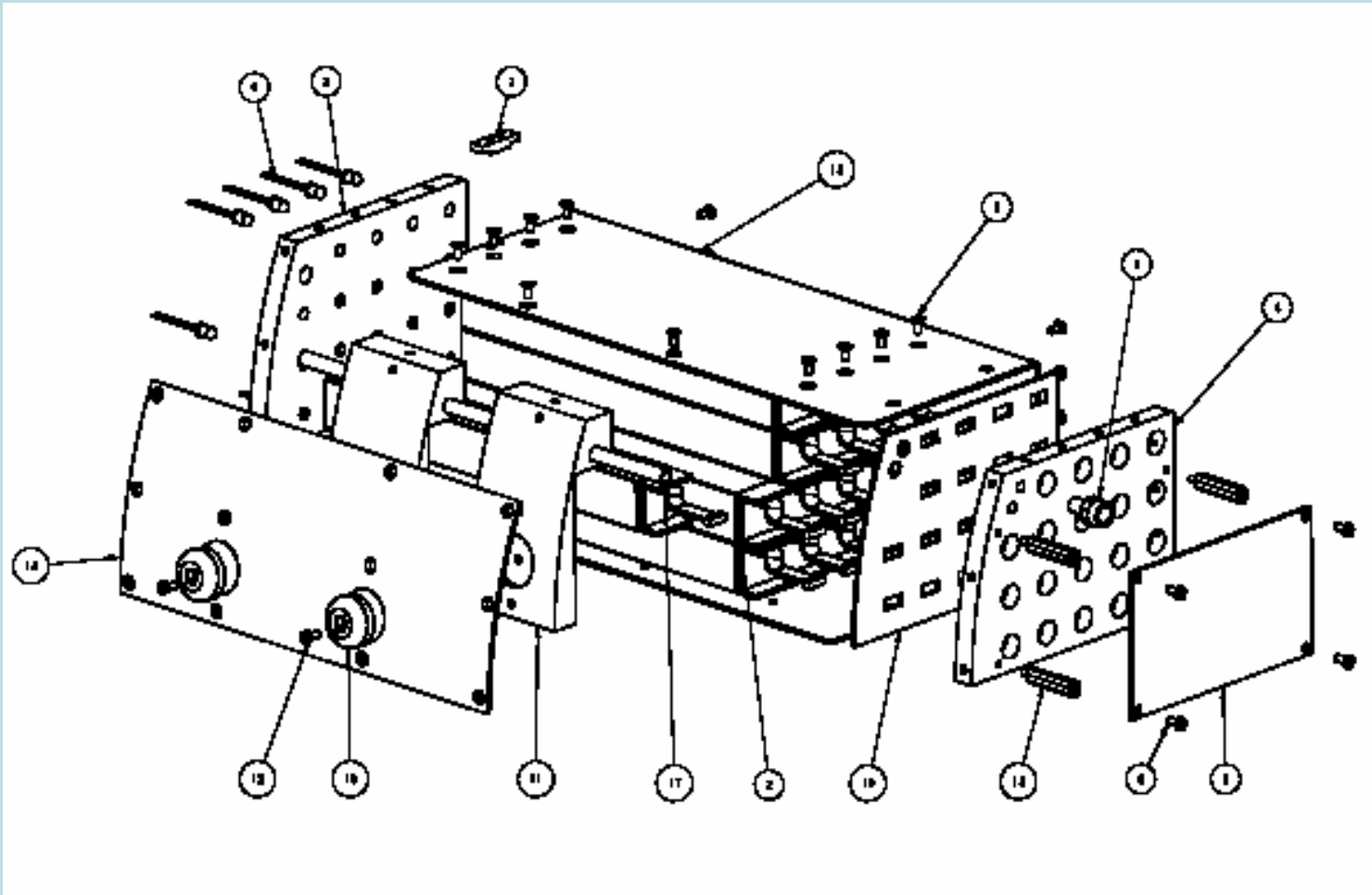
Modules are attached to adjacent modules with tab/slots at rear and screws at front



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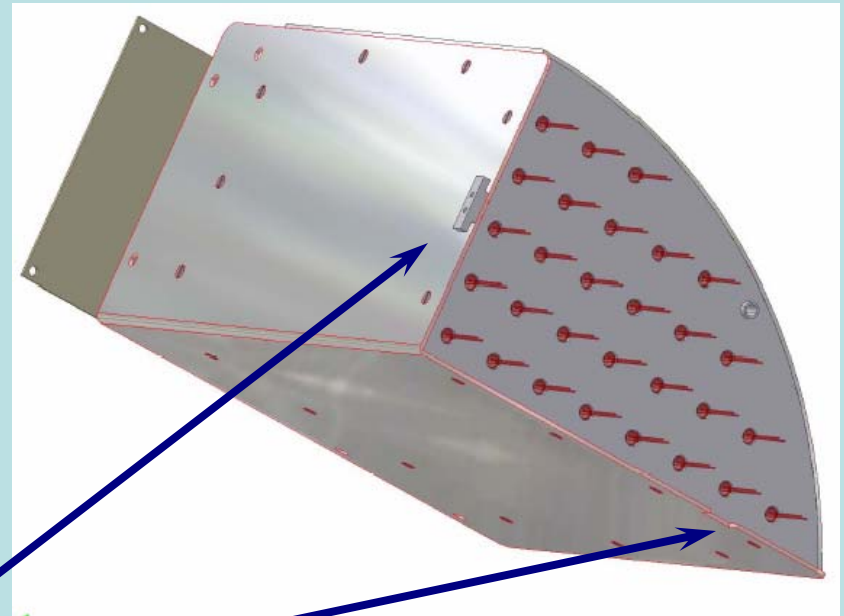
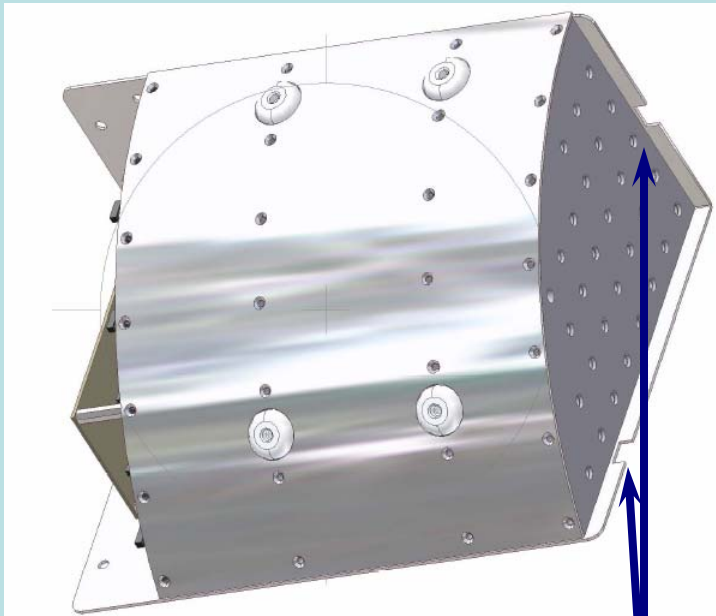
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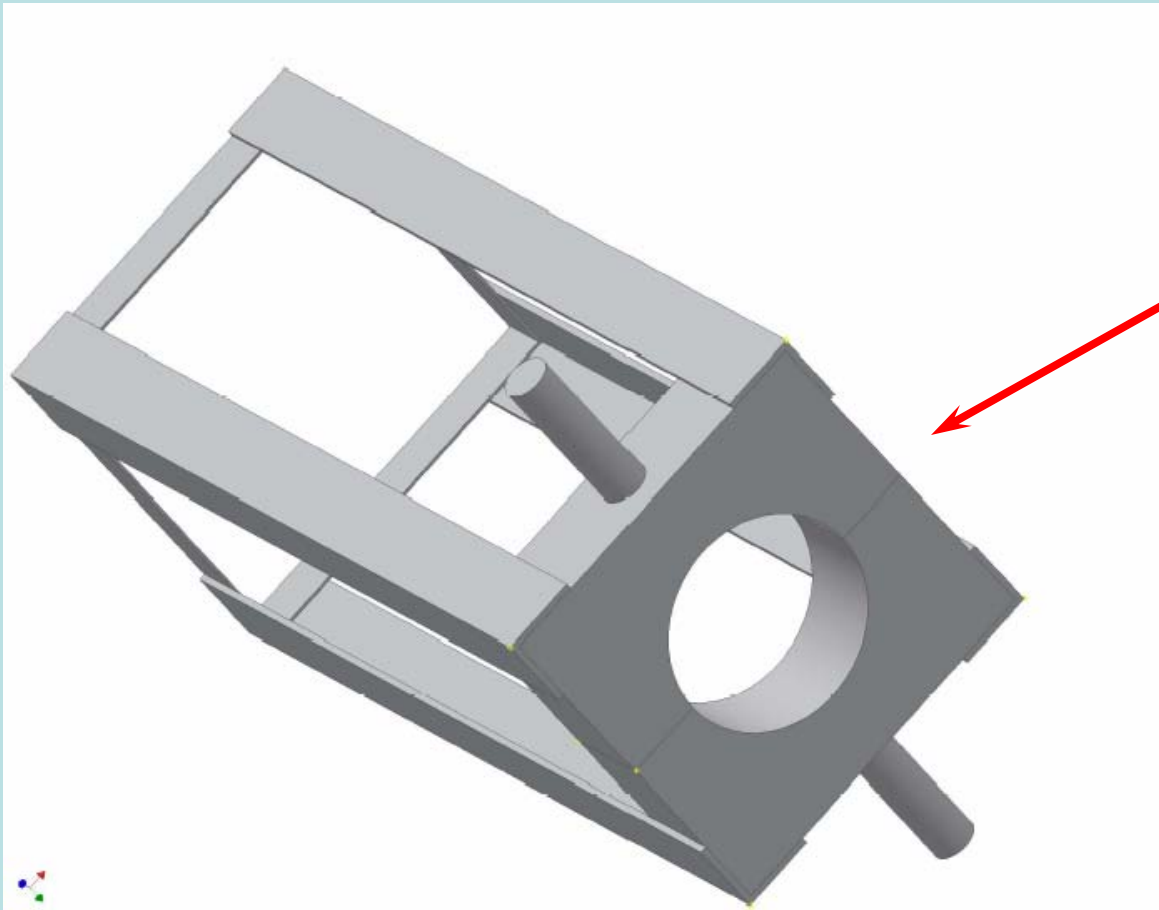
## Installation



**Locking Tabs at rear of modules**

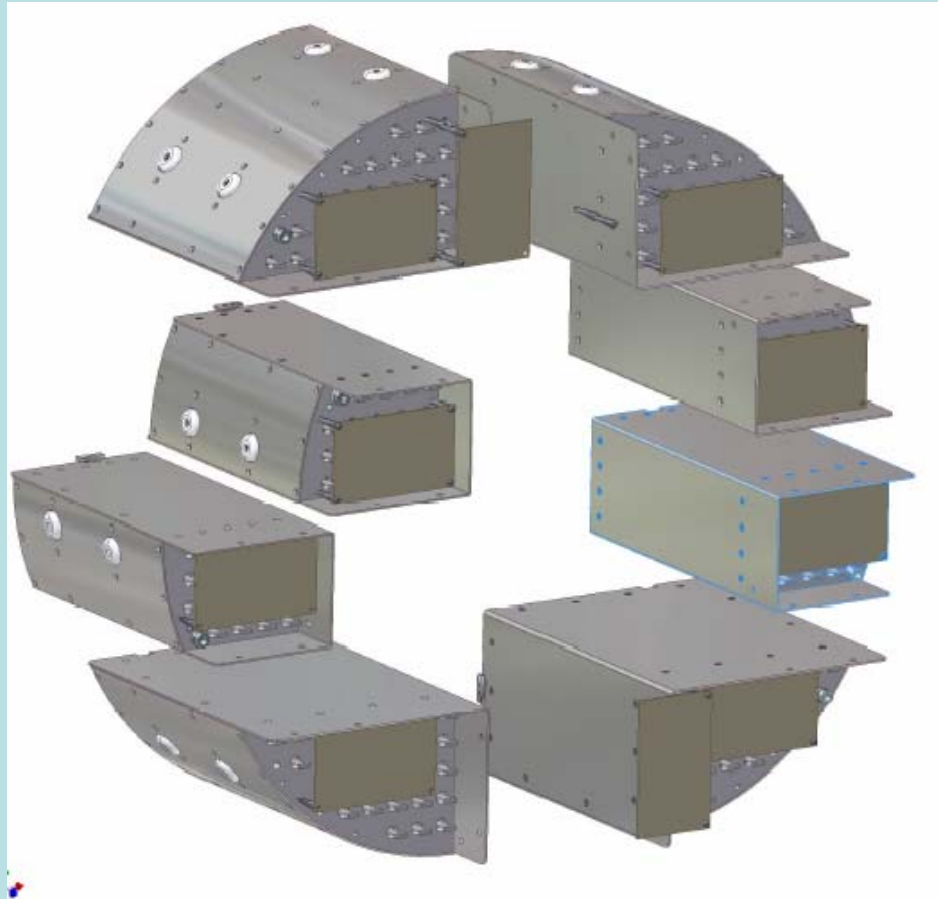
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## Installation



**MPC Installation  
Tool**

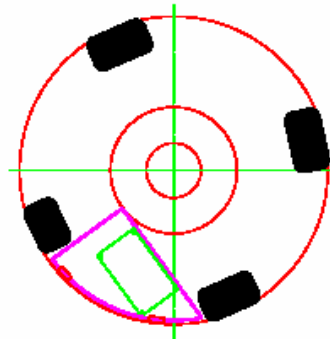
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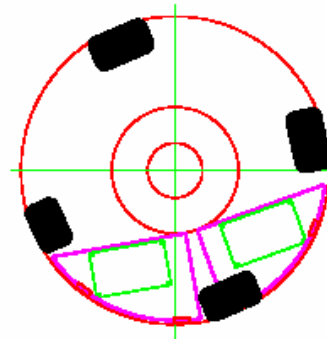
## Installation

**1. Insert lower-west wedge module**



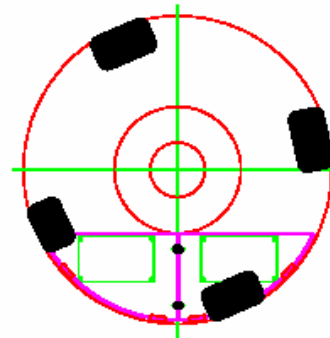
STEP 1

**2. Rotate lower-west wedge module counter-clockwise, insert lower-east module**



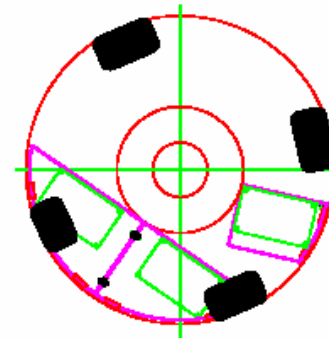
STEP 2

**3. Rotate lower wedge modules to normal position**



STEP 3

**4. Rotate lower wedge modules clockwise, insert below-center west block module**

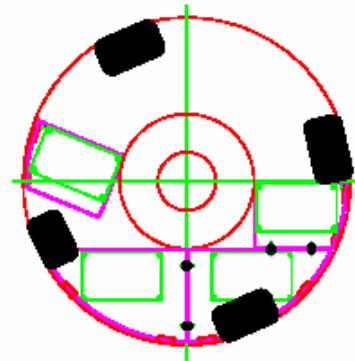


STEP 4

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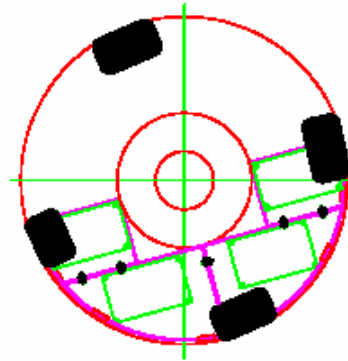
## Installation

**5. Rotate modules back to normal position. Insert below-center east block module**



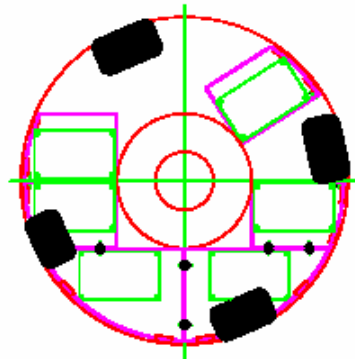
STEP 5

**6. Rotate modules counter-clockwise, insert above-center east block module**



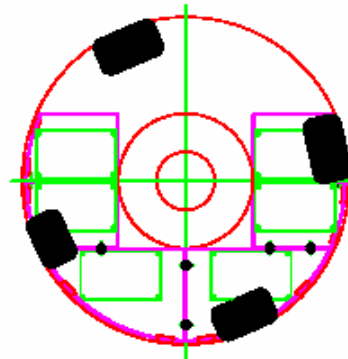
STEP 6

**7. Rotate modules to normal position. Insert above-center West block module**



STEP 7

**8. Ready for upper wedge modules**



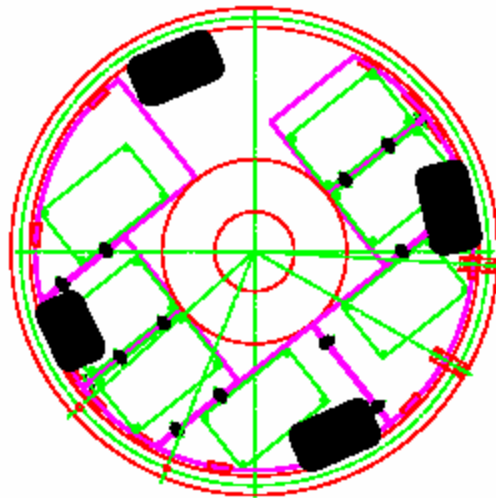
STEP 8



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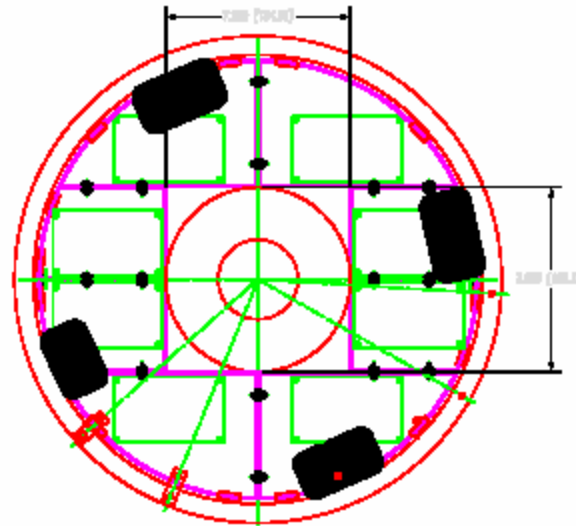
## Installation

**9. Rotate modules counter-clockwise. Insert upper east wedge**



STEP 9

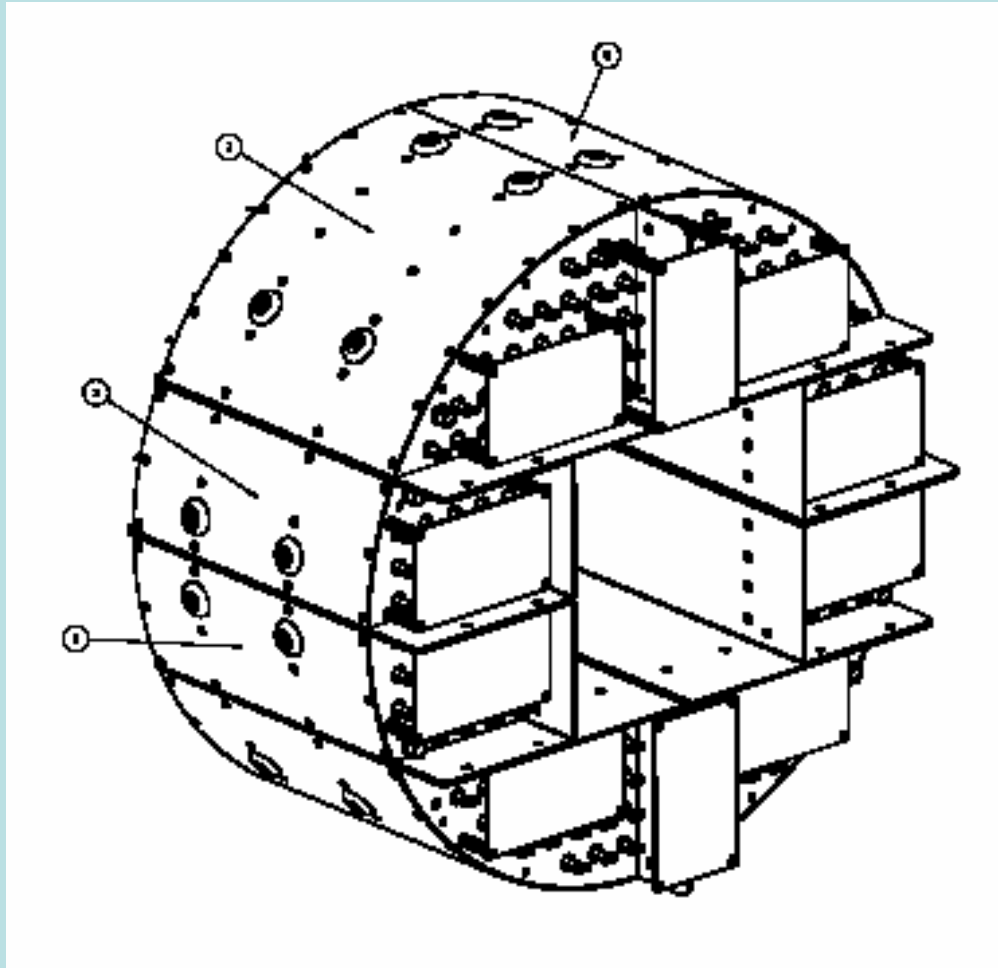
**10. Rotate modules clockwise, to normal position. Insert upper-west wedge module**



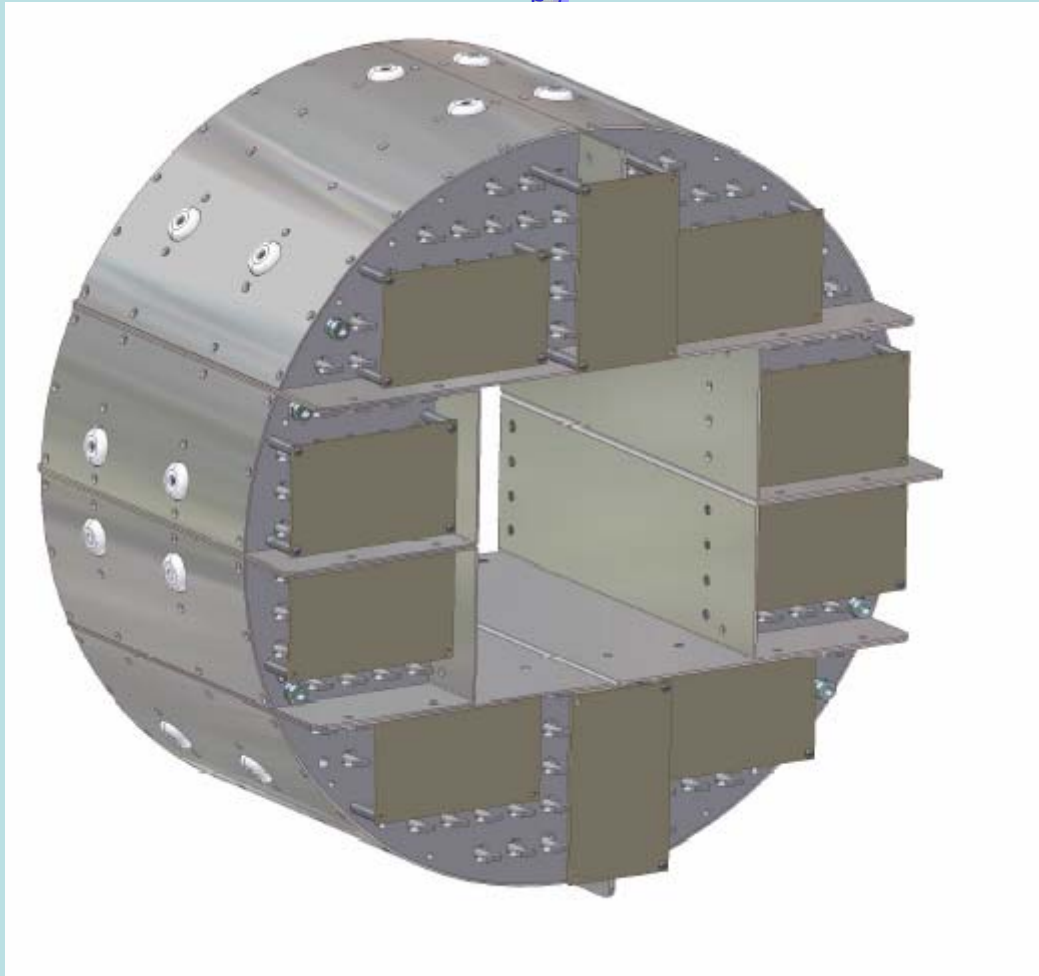
STEP 10

**11. Connect cables and gas lines, push assembly to back wall of cavity align and lock in position**

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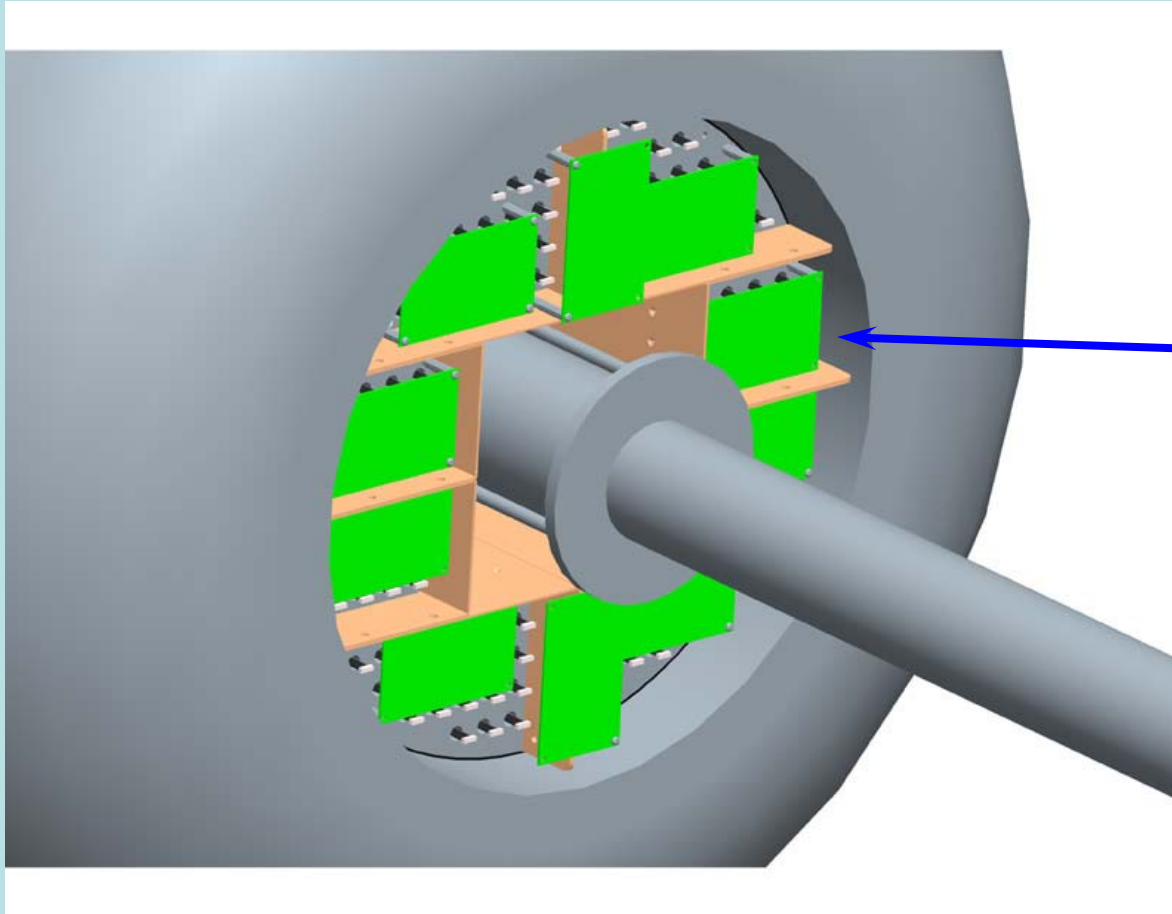


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**MPC after all  
modules are  
installed, before  
moving back in  
cavity and  
before being  
cabled**

**(MuTr Station 1  
omitted for  
clarity)**